Bonneville Power Administration
Fish and Wildlife Program FY99 Proposal

Section 1. General administrative information

Video Fish Monitoring Project

Bonneville project number, if an ongoing project 8812005

Business name of agency, institution or organization requesting funding
Yakama Indian Nation

Business acronym (if appropriate) YIN

Proposal contact person or principal investigator:

Name	Melvin Sampson
Mailing Address	P.O. Box 151
City, ST Zip	Toppenish, WA 98948
Phone	509-865-6262
Fax	509-865-6293
Email address	yinfish@yakama.com

Subcontractors.

Organization	Mailing Address	City, ST Zip	Contact Name

NPPC Program Measure Number(s) which this project addresses.
7.4K

NMFS Biological Opinion Number(s) which this project addresses.
Biological Opinion for 1995 to 1998 Hatchery Operations in the Columbia River Basin (NMFS 1995a); Biological Assessment of 1997-2001 Hatchery Operations of the Proposed Cle Elum Hatchery, December 1995 (BPA 1995); NMFS concurrence letter dated 4/1/96.

Other planning document references.
1. Wy-Kan-Ush-Mi-Wa-Kish-Wit, Yakima Basin (pp. 56-64)

2. The BPA Yakima Subbasin plan.
3. The CRFMP.

Subbasin.
Yakima

Short description.
Monitor/evaluate (M/E) adult fish passage at Prosser and Roza dams in the Yakima basin. This project is one of several M/E componets of the Yakima/Klickitat Fisheries Project (YKFP). Key objectives are to enumerate and record life history type data for

Section 2. Key words

Mark	Programmatic Categories	Mark	Activities	Mark	Project Types
X	Anadromous fish		Construction		Watershed
	Resident fish		O & M		Biodiversity/genetics
	Wildlife		Production	+	Population dynamics
	Oceans/estuaries	+	Research		Ecosystems
	Climate	X	Monitoring/eval.	+	Flow/survival
	Other	+	Resource mgmt		Fish disease
			Planning/admin.	X	Supplementation
			Enforcement		Wildlife habitat en-
			Acquisitions		hancement/restoration

Other keywords.
video, fish counts

Section 3. Relationships to other Bonneville projects

Project #		Nature of relationship
8812001		Core management/admin. Support services for all YIN's YKFP tasks.
8811500	Yakima Hatchery Construction	Final design/construction of needed acclimation facilities/wells for YFP.
9701300	Yakima Cle Elum Hatchery O & M	O & M costs for Cle Elum Supple. and Research Facilities. Core facility for the Yakima Fisheries Project.
9506300	Yakima/Klickitat M&E Program	Covers the diverse M&E needs for the target species which are essential for the success of the YKFP.
8811500	Fisheries Technician Field Activities	Provides essential technical support

		to fulfill the diverse needs of the YKFP (ie., M&E support, surveys, juvenile facilities operations, marking.).
9706200	Objectives & Strategies for Yakima	Represents the modeling process for iterative planning for species consistent with the RASP.
963301	Yakima River Fall Chinook Suppl-O&M	Essential for YKFP's all stock initiative for experimental purposes for supplementation.
9603302	Yakima River Coho Suppl- O&M	Essential for YKFP's all stock initiative for experimental purposes for supplementation.
9506404	Policy/Tech Involvement/Planning-YKFP	Supports the required co-manager process for the YKFP.
9506406	Monitoring of Supplementation Response Variables for YKFP	Essential for adequate M&E planning and technical participation as co-manager of the YKFP.
9506402	Upper Yakima Species Interaction Studies	Vital M&E function relative to behavior of multi-species within the Yakima Basin for the YKFP. Defines competitive/ecological interactions.

Section 4. Objectives, tasks and schedules

Objectives and tasks

Obj 1,2,3	Objective	Task a,b,c	Task
1	Record adult salmonid passage and associated life history for each salmon run at Prosser and Roza dams.	a	Record fish passage totals from the video tapes.
		b	Estimate the hatchery/wild run composition for each species.
		c	Determine the run time and daily/weekly and cumulative passage for each salmon run.
		e	Double read a random sample of spring and fall run video tapes, conducting QC checks for accuracy with respect to fish counts, marks, fish measurements

			and species ID.
		f	Determine if there is a fish bias with respect to size and usage between ladders in how fish pass between the three Prosser fish ladders.
		g	Record external marks, ie., tags, clips, bites.
2	Continue to make refinements (as needed) to the to the existing video Image Archiving system (VIAS) which were initiated in FY1997 and 1998.	a	Make, if needed, refinements in the image capture and editing systems (office).
		b	Make, if needed, changes to the Prosser lighting systems.
		c	Investigate and implement, if feasible, video transmission from Prosser Dam to the YIN fisheries office PC/video storage device
		d	Make, as required, modifications to tape/image file processing procedures and the data management process (office).
3	Prepare a written annual report	a	Analysis and summarize data collected and present results, discussion and recommendations pertaining to the stated objectives and tasks.
4	Based on the FY1998 investigation of video monitoring at Horn Rapids and Cowiche dams, install a demonstration video monitoring system at one or both locations.	a	Install a video monitoring system and assess the quality of fish images produced and evaluate technical/logistical constraints at the dam site.

Objective schedules and costs

Objective #	Start Date mm/yyyy	End Date mm/yyyy	Cost %
1	1/1999	12/1999	50.00%
2	1/1999	12/1999	10.00%
3	1/1999	12/1999	5.00%

4	1/1999	12/1999	10.00%
5	1/1999	1/1999	20.00%
6	1/1999	12/1999	5.00%
			TOTAL 100.00%

Schedule constraints.
The inability to develop the fish image editor would require modification to how data is processed. Essentially we would continue to manually play-back the tapes as is currently done.

Completion date.
This is a ongoing project that will be required as long as the YKFP exists.

Section 5. Budget

FY99 budget by line item

Item	Note	FY99
Personnel		$89,250
Fringe benefits		$16,500
Supplies, materials, non-expendable property		$19,400
Operations & maintenance		$2,000
Capital acquisitions or improvements (e.g. land, buildings, major equip.)		$18,000
PIT tags	# of tags:	$0
Travel		$1,000
Indirect costs		$29,900
Subcontracts		$0
Other		$3,950
TOTAL		$180,000

Outyear costs

Outyear costs	FY2000	FY01	FY02	FY03
Total budget	$160,000	$170,000	$180,000	$190,000
O&M as % of total	2.00%	2.00%	2.00%	2.00%

Section 6. Abstract

The Fish Video Monitoring Project (FVMP) is an key M/E task under the Yakima/Klickitat Fisheries Project (YKFP) in the Yakima basin. The YKFP is a hatchery supplementation project designed to test the hypothesis that supplementation is a viable method to restore salmonid populations in the Columbia Basin, while maintaining long term genetic fitness, and to manage adverse ecological interactions. The YKFP is an identified project in the 1994 FWP under “Coordinated Salmon Production and Habitat” (7.4K). It is an experimentally based project designed to monitor and evaluate the performance of various hatchery treatment groups relative to each other, and to the natural populations.

The FVMP provides the ability to M/E adult returns to Prosser Dam and Roza Dam. Thus, various survival rates to adult return (ie., smolt-to-adult, parr-to-adult) can be evaluated for both hatchery and naturally produced fish.
The main objective of the VFMP is to enumerate the spring and fall chinook, coho and steelhead adult spawner runs and to collect life history data associated with these runs. The summarized data is provided to the YKPF managers and researchers.

The VFMP uses a video camera that is located at each fish viewing window which is linked to a time-lapse video deck. The video "stream" is captured to a VHS tape, and is played-back and data recorded by a fisheries technician. The VFMP is currently being upgraded to digitally based system that will provide shaper images, image enhancement capabilities, automated image editing (hopefully) and PC based image storage.

Section 7. Project description

a. Technical and/or scientific background.

As aforementioned in the **Short Description Section**, the FVMP is an M/E component of the YKFP (7.4K in the FWP 1994 document). The YKFP is an experiment to test the hypothesis that supplementation is a successful method to rebuild natural salmon populations, with adaptive management as the underlying experimental/management approach. This requires that M/E be conducted to assess the progress towards rebuilding of the Yakima basin salmon populations, and to provide M/E type data to evaluate supplementation strategies. Specifically, the FVMP provides a monitoring tool to evaluate various supplementation treatments applied in the hatchery among groups (OCT vs SNIT), and to evaluate the relative success of these hatchery treatments to the natural population(s).

Monitoring the Yakima basin salmonid runs using video was initiated in 1989 at Prosser Dam at the right bank ladder (there are three ladders), and later at the single Roza Dam ladder. The two main tasks over the years have been, 1) to enumerate the salmonid runs and record associated life history data and, 2) to make improvements to the video systems (field) and data processing methods (office). The YIN was the principle investigator to carry out task 1, while Battelle (PNL) was the principle investigator to initiate work on task 2. Since 1996 the YIN and BOR have continued the work begun by PNL on task 2.

b. Proposal objectives.

The objectives and tasks were presented in Section 4, thus a bullet list of specific data type outcomes will be presented.

1. Estimate the adult spawner run size past Prosser Dam for spring chinook, fall chinook, coho and steelhead (for both adipose and non-adipose clipped fish).
2. Estimate the adult spawner run size past Roza Dam for spring chinook, fall chinook and steelhead (for both adipose and non-adipose clipped fish).
3. Record rare or unusual species seen, ie., lamprey, bull trout.
4. Determine the weekly and cumulative run timing past Prosser and Roza dams for each species.
5. Estimate the size composition of each salmon run at Prosser and Roza dams.
6. Summarize how adult salmon use the three Prosser fishways with respect to maturity (jack vs adult), size, and numerical.
7. Record physical parameters that may affect the fish monitoring, such as, water turbidity, flood events, equipment failures, etc.
8. Evaluate (QC) the results from a random sample of double-read video tapes (read once by two different technicians), and compare the results with respect to: total fish count, fish body measurements and species identification.
9. Conduct tests (ie., the light systems test in fall 1996), as deemed necessary, to scientifically evaluate the video monitoring system.
10. Contact video/computer vendors and other researchers using video monitoring technology on how to improve the effectiveness of the video monitoring system, both in the field (recording) and in the office (data retrieval, processing and storage).
11. State the required video monitoring elements with respect to video hardware and facility modifications to make video monitoring effective at Horn Rapids Dam (lower Yakima) and at Cowiche Dam (lower Naches).
12. Present the summarized data to the YKFP data manager to make it available to interested parties and individuals, etc.

c. Rationale and significance to Regional Programs.

The Yakima Klickitat Fisheries Project is part of a comprehensive effort by the Northwest Power Planning Council, Yakama Indian Nation, Washington Department of Fish and Wildlife, U.S. Bureau of Reclamation, U.S. Forest Service, and the Bonneville Power Administration to protect, mitigate and enhance the anadromous fish populations in the Yakima and Klickitat River basins. These governments and agencies have developed and implemented a long-term strategy to restore the habitat and ecosystem necessary to support the anadromous fish resources in the Yakima River basin and to increase fish production through supplementation.

Planned by the Council since 1982 and included its Columbia River Basin Fish and Wildlife Program (“Program”) as Measure 7.4K.1, the YKFP’s operation is calculated to compensate for losses from development and operation of hydroelectric projects elsewhere in the Columbia Basin. Project development has been subject to the NMFS Biological Opinion for 1995 to 1998 Hatchery Operations in the Columbia River Basin (NMFS 1995a) and BPA’s Biological Assessment of 1997-2001 Hatchery Operations of the Proposed Cle Elum Hatchery, December 1995 (BPA 1995), which was concurred to by NMFS in its letter dated 4/1/96. See YKFP Final EIS, January 1996.

d. Project history

The VFMP was initiated in 1989 as a task order under the YKFP, which has been in existence since 1982.

Below is a list of annual reports (final and in progress):

Fast, D. E. et al. 1989. Yakima/Klickitat Natural Production and Enhancement Program. Prepared for Bonneville Power Administration. Project No. 88-120. Grant DE-A179-88BP93203.

Hubble J. D. et al. 1990. Yakima/Klickitat Natural Production and Enhancement Program. Prepared for Bonneville Power Administration. Project No. 88-120. Grant DE-A179-88BP93203.

Hubble, J. D. et al. 1991. Yakima/Klickitat Natural Production and Enhancement Program. Prepared for Bonneville Power Administration. Project No. 88-120. Grant DE-A179-88BP93203.

Hubble, J. D. 1992. Yakima/Klickitat Natural Production and Enhancement Program. Prepared for Bonneville Power Administration. Project No. 88-120. Grant DE-A179-88BP93203.

Hubble, J. D. 1993. Yakima/Klickitat Natural Production and Enhancement Program. Prepared for Bonneville Power Administration. Project No. 88-120. Grant DE-A179-88BP93203.

Hubble, J. D. 1995. Fish Video Monitoring Project. Prepared for Bonneville Power Administration. Project No. 93AT11008. (In progress).

Hubble, J. D. 1996. Fish Video Monitoring Project. Prepared for Bonneville Power Administration. Project No. 93AT11008. (In progress).

As a M/E component of the YKFP, the VFMP has maintained an ongoing database of spring and fall chinook, coho and steelhead counts at Prosser and Roza dams. Associated life history data for each run is-- daily/weekly and cumulative passage, total estimated run size, number of marked fish (ie., CWT), and estimated fork length. Other non-life history type data collected is fish usage patterns at each of the three Prosser ladders with respect to number of fish passage, fish size and maturity, and passage conditions (ie., turbidity, flood events).

The adult fish passage data (counts and life history) have been used in the preparation of the YKFP Spring Chinook Monitoring Plan, the YKFP FEIS, the spring chinook, fall chinook and steelhead modeling projects and, the spring chinook, fall chinook and coho PSR's. The data is also used by various natural resource managers in the Yakima basin.

Since about 1990, efforts to improve the fish viewing facilities at Prosser Dam were initiated. Battelle (PNL) focused on improvements to the lighting conditions and the associated behavioral hindrances caused by the lights, and the development of a fish image capture and data management system (VISA- video image system archiving system). In 1996, the YIN and BOR, in collaboration, continued the work initiated by PNL on both the light systems and the VISA, as well as, initiating improvements to the video system at the right bank ladder (Prosser). In the fall 1996 a light experiment between the conventional visible light system and the infra-red light system was conducted at the right bank ladder. A draft report of the results is forth coming in January 1998 by the BOR. In 1996 the BOR installed shutoff gates at the center and left ladder (Prosser), making it easier to maintain the viewing windows and fish passage slot. In 1997 these two shutoff gates were motorized, further enhancing the ease of the operation. In December 1997 the YIN and BOR investigated video/computer hardware and software required to make improvements to the fish monitoring systems (field and office). This work will continue into 1998. Purchases were made in December 1997 to upgrade the video cameras (field), computers (office) and image processing software (office and field).

Over the past several years we have had contacts from other agencies in the Columbia Basin who are initiating fish video monitoring projects. Thus the methods and video/computer hardware &

software being used on this project is providing information for other agencies interested in this type of fish monitoring method.

e. Methods.

As mentioned earlier, present fish video monitoring occurs at Prosser (3 ladders) and Roza (1 ladder) dams, with the potential to begin video monitoring at Horn Rapids (lower Yakima) and Cowiche (lower Naches) dams. The project is currently in the process of upgrading the video/computer hardware and software used to carry out video monitoring.

Each fish ladder has its own viewing vault, which is maintained by the BOR (for large capital improvements). The Prosser video system consists of a digital/analog video camera located in front of each viewing window. Currently, the video signal from each camera is directed to a time lapse recorder deck (records in 24-72 hr mode), which captures the video stream onto 2hr VHS tapes. An upgrade, under investigation, is to capture the video stream in digital format directly to a PC using an external tape drive storage device. Initially every video image (3 fps) will be captured. Eventually it is hoped that an editing MACRO can be developed which will process the video stream sent from the camera in near real time, thus ultimately only storing actual fish images (opposed to mostly images of water with some fish images). If successful, this will greatly reduce the amount of computer storage space required. Presently, the VHS tapes are collected in the field and brought back to the office for analysis. Eventually it is hoped that the video images could be sent back to the office via a modem and phone line. The goal is for the field PC's to process the video images on site and transmit back to the office zipped files of the previous 24 hours' fish images.

Presently, VHS tapes are played-back using VHS tape editor decks. Tapes are fast-forwarded until a fish of interest is located. The data recorded for each fish is- ladder, passage date and time, species (including unknown), fork length (if measurable) and marks (if any) or unusual scars, bites, etc. In 1998 frame grabber boards are to be installed in each PC, which is linked to the tape editor deck. This will allow an individual fish image file and its associated data to be stored digitally on the PC. An optical software program (Optimas) is used to interface the PC and tape editor. This software can also be used to enhance the image conduct various body measurements that can be used to increase fish identification capabilities. If the VHS tape editing MACRO proves successful, then individual fish image files can be directly processed on the PC, negating the need for the tape editor deck.

Data recorded from each VHS tape is recorded directly on to a hard copy data form which is then entered into the ACCESS data base. See Section 10 below for how data is made available to the YKFP and other interested parties.

A random portion of video tapes are read a second time by the other video technician, and the results are complied and compared with respect to total fish count, species identification, and fish size. This information is currently being used to assess where problems occurs, their probable cause, and methods to reduce the problem.

There are two main problems or uncertainties that are being addressed. The first is to increase the percentage of positive identification for fall run salmon. This important to increase the accuracy of the fish counts. The main problem is the difficulty associated with distinguishing small size fall chinook from coho, to a much lesser degree steelhead. There is also the difficulty of identifying adipose vs non-adipose clipped fish. Much of the video system improvements are aimed at addressing this problem. The second problem is related to the desire/need of the YKFP research group (MIPT) to develop an external mark (ie., elastomer color body marks) that could be identified from the video fish image (intrusive monitoring). This would allow for greater flexibility and scope of experimental fish groups released under the YKFP. Again, improvements to the video system are aimed at meeting this need.

f. Facilities and equipment.

Facilities: Prosser Dam with 3 fish viewing windows and Roza Dam with 1 viewing window. Additional potential sites are Horn Rapids Dam (primarily for fall chinook monitoring) and Cowiche Dam (primarily for spring chinook and coho).

Required Field Equipment (current): analog video camera, VHS time-lapse recorder, light system, VHS tapes, storage cabinet for recorder decks, etc.

Required Field Equipment (under development): digital video camera; video camera interface board; PC with frame grabber board with image processing capabilities, an external tape storage device, and required software; modem; phone line; light system; storage cabinet.

Required Office Equipment (current): VHS playback editor deck with monitor; PC to manage data.

Required Field Equipment (under development): Near term- VHS playback editor deck with monitor linked to a PC with frame grabber board; optical and data management software. Long term- PC with external tape drive storage device and modem to receive data transmission from field sites; optical and data management software; or PC with external tape drive storage device and video image files are uploaded by hand from the field PC to a disk/tape and then downloaded to the office PC for data analysis.

g. References.

None.

Section 8. Relationships to other projects

9105700	Yakima Phase 2 Screen Fabrication	Vital to species control within basin for straying into irrigation diversions
9200900	Yakima Screen- Phase II- O&M	Vital to maintain screens for above purpose and effectiveness.
9107500	Yakima Phase 2 Screens- Construction	Vital for control within basin for straying into irrigation diversions.
950330	O&M of Yakima Fish Protection, Mitigation & Enhancement Facilities	Vital to maintain screens for control of target species within basin from irrigation diversions.
9704900	Teanaway Instream Flow Restoration	Essential tributary enhancement vital to the success of YKFP.
9603501	Satus Watershed Restoration	Represents a positive factor for improving tributaries within Yakima Basin. Vital for supplementation.
9506800	Klickitat/Habitat Preliminary Design Project, YIN	The Klickitat project in its preliminary stages is a vital part of the YKFP for the implementation of supplementation.
5512700	Klickitat Basin Culvert Rehabilitation, YIN	Passage within tributaries is essential for natural restoration of species.
5512600	Upper Klickitat Meadows Riparian	Contributes to improving prime habitat

	Restoration, YIN	which is vital for success of supplementation implementation.
5512800	Lower Klickitat Habitat Enhancement Project, YIN	Essential for improved reproduction of affected species.

Section 9. Key personnel

YKFP Project Manager:

MELVIN R. SAMPSON
370 N. BROWN ROAD
WAPATO, WASHINGTON 98951
509-848-2854

==========

EXPERIENCE:

2/93-PRESENT POLICY ADVISOR/PROJECT COORDINATOR
Yakima/Klickitat Fisheries Project
Yakama Indian Nation
Toppenish, WA 98948

1989-1992 PRESIDENT
-Melco Petroleum Inc., Wapato, WA 98951
-Wholesale fuel distribution
VICE-PRESIDENT
-Yakima Petroleum Inc., Wapato, WA 98951
-Wholesale fuel distribution
-Eagle Stop and Save, Inc.
-Fuel-convenience stores
-Yakima Solutions Inc., Wapato, WA 98951
-Native Solutions Inc., Wapato, WA 98951
-Consulting and Business Management

1985-1989 CHAIRMAN, YAKAMA TRIBAL COUNCIL

1971-1989 YAKAMA TRIBAL COUNCIL (ELECTED)
Committees served:
-Timber, Grazing, Overall Economic Development
-Loan, Extension, Education, and Housing
-Legislative
-Health, Employment, Welfare, Recreation, and Youth Activities
-Budget and Finance
-Executive Board
-Enrollment
-Special Tax Committee
-Radio Active/Hazardous Waste
-Public Relations/Media
-While serving on the Tribal Council for 18 years, I served as Chairman at one point of the listed committees

1971 TRIBAL PLANNER

1969-1970 ASSISTANT MANAGER
PERSONNEL MANAGER

-White Swan Industries
-Wholesale Furniture Manufacturing

1968-1969 RESIDENT COUNSELOR
-Fort Simco Job Corps
-Worked nights, commuted to CWSU during day

1967-1968 MANAGER TRAINEE
-White Swan Industries
-Wholesale Furniture Manufacturing

1965-1967 Industrial injury, not employed

1961-1965 STUDENT
-Lower Columbia College, Longview, WA
-While attending college, worked full time at night in a lumber planner mill in various jobs, including lumber grader.

1959-1961 -U.S. Army, Active Service

1956-1959 VARIOUS JOBS
-Fisherman
-Boeing Aircraft Company
-Construction
-Farm Labor

EDUCATION:

American Indian Management Institute, Albuquerque, NM
-Completed six-week comprehensive studies on Tribal Executive Development
Central Washington State College, Ellensburg, WA
-Major: Sociology Minor: Psychology, Business
Lower Columbia College, Longview, WA
-Business Major
Lower Columbia College, Longview,WA
-Associate Degree in Electronics, 1963
White Swan High School, White Swan, WA.
-Graduate, 1956

ORGANIZATION AFFILIATES:

-Lifetime member, National Congress of American Indians
-Member, Fraternal Order of Eagles No. 2225, Toppenish, WA
-Founder, member, past Chairman, Northwest Portland Area Indian Health Board, Portland, OR. (18 years)
-Member, past Chairman, National Indian Health Board, Denver, CO (16 years)
-Served as a member, Indian Food & Nutrition Board, Denver, CO (3 years)
-Served, Yakima Valley College Board of Trustee, Yakima, WA (2 years)

-Served as member, founder, Heritage College Board of Trustees, Toppenish, WA
-Served on Advisory Board, Master of Public Health, University of California at Berkeley, CA. (2 years)
-Served on, Inter-Mountain School Board, Provo, UT (2 years)
-Member, President, Yakama Indian Rodeo Assoc., (25 years, volunteer)
-Member, founder, past President, Western States Indian Rodeo Assoc. (20 years)
-Member, founder, current President, Indian National Finals Rodeo, Inc.,(22 years)
-Served as member, Special Yakima Rodeo Board, to produce, promote the National High School Rodeo Finals in Yakima, WA. in 1980.
-Served on "The Advisory Panel on Alternative Means of Financing and Managing Radioactive Waste Facilities", Administrative Appointee, Depart. of Energy, 1984.

RECOGNITIONS:

-Yakama Indian Nation, Supervisor of the Year, 1995.
-Board Member of the year, Northwest Portland Area Indian Health Board, 4 times.
-Board Member of the year, National Indian Health Board, 2 times.
-Special Recognition of Appreciation as a Founder of Western States Indian Rodeo Association on their Tenth Anniversary.
-Special Recognition as a Founder of the Indian National Finals Rodeo from the American Revolution Bicentennial, 1776-1976.
-National Indian Rodeo Man of the Year, 1978, Hoof and Horns Magazine.
-National Indian Man of the Year, American Indian Heritage Foundation, Washington, D.C., 1988.

MILITARY EXPERIENCE:

1959-1965 VETERAN, United States Army, Honorable Discharge, SGT E-5.

PERSONAL DATA:

Date of Birth: April 20, 1938
Tribe: Yakama, Enrollment # 4059
Marital Status: Married, 5 daughters, 1 son

HOBBIES AND INTERESTS:

-Hunting, Fishing, Horses, Sports, Crafts, & Rodeo

REFERENCES:

-Submitted upon request

YKFP Research Manager:

CURRICULUM VITAE

DAVID E. FAST

Fisheries Resource Management
P.O. Box 151

Toppenish, Washington 98948
Work: 509-966-5291

Education

University of Washington, Seattle, Washington
Doctor of Philosophy in Fisheries Science, 1987.

University of Puerto Rico, Mayaguez, Puerto Rico
Master of Science in Marine Sciences, 1974.
St. John's University, Collegeville, Minnesota
Bachelor of Science in Zoology, 1969.

Research Experience

1988-Present: Research Manager. Fisheries Resource Management Program, Yakima Indian Nation. Responsible for the design, development, and implementation of a major supplementation and research facility to test the concept of using artificial production to rebuild natural spawning populations of spring
chinook salmon in the Yakima Basin. Write detailed project plans, develop short and long-term project goals and objectives, and supervise professional and technical staff.

1985-1988: Project Leader. Spring Chinook Enhancement Study.
Responsible for research project designed to determine the best methods of enhancing the spring chinook salmon population in the Yakima Basin. Evaluate survival through various life stages and total production of naturally producing salmon. Determine methods of supplementation with hatchery reared fish while minimizing adverse genetic impacts.

Fast, D.E. 1987. The Behavior of salmonid alevins in response to light, velocity and dissolved oxygen during incubation.
Pages 84-92 in Salmonid Migration and Distribution Symposium (E.L. Brannon, ed.), School of Fisheries, University of Washington, and Directorate for Nature Management, Norway, Trondheim, Norway.

Fast, D.E., J.D. Hubble, T.B. Scribner, M.V. Johnston, W.R. Sharp.
1989. Yakima/Klickitat Natural Production and Enhancement Program. 1989 Annual Report to Bonneville Power Administration. Project 88-120. 107 pp.

Fast, D.E. 1989. Supplementation Strategies For The Yakima/Klickitat Production Facility. Pages 143-147 in Northwest Fish Culture Conference Proceedings (R.Z. Smith, ed.).

Fast, D.E., J.D. Hubble, M.S.Kohn, and B.D.Watson. 1991. Yakima River Spring Chinook Enhancement Study. Project Completion Report to Bonneville Power Administration. Project 82-16. Volume 1 - 345 pp. and Volume 2 (Appendices) 133 pp.

.

Principal Investigator for the Fish Video Monitoring Project: Joel Hubble. Has had oversight of the YKFP, FVMP since its inception in 1989 and has been directly involved in the development of the project, both the technological side, as well as, the video tape reading process and the data management process.

Work HistoryWork History

Yakama Indian Nation, Fish. Res. Management, Toppenish, WA 1993 - Present
Fisheries Biologist III (research biologist)
My primary responsibility is to develop monitoring/evaluation studies for various tribal fisheries projects, and to provide oversight in the implementation of these field studies. I'm most involved with the BPA funded Yakima/Klickitat Fisheries Project (YKFP) and the Douglas PUD funded Methow Basin Spring Chinook Supplementation Project (project leader).

I have oversight of the BPA funded video adult fish monitoring project in the Yakima basin which is part of the YKFP.

Since fall 1995 I have participated in Ecosystem Diagnosis Treatment (EDT) modeling of the Yakima Basin steelhead and fall chinook populations.

Other responsibilities include preparation of annual work statements and budgets; data analysis and annual report writing; and the direct supervision of two field biologists and three video monitoring fisheries technicians.

Yakama Indian Nation, Fish. Res. Management, Toppenish, WA 1989 - 1993
Fisheries Biologist II
Project Leader for the BPA funded Yakima\Klickitat Fisheries Project. Duties included oversight of the YIN's work statement, preparation of the annual budget, work plan and report, and oversight of field research activities and data analysis.

Yakama Indian Nation, Fish. Res. Management, Toppenish, WA 1982 – 1988

Fisheries Biologist I
Field biologist for the BPA funded Yakima Basin Spring Chinook Enhancement Study. Duties included supervision of field crews, collection of field data, data analysis and report writing.

Yakama Indian Nation, Fish. Res. Management, Toppenish, WA 1979 - 1982
Fisheries Biologist I
Primary responsibility was to inventory the salmonid populations in reservation streams. This involved the collection of life history data, such as, population density, estimates of biomass,

length/age composition, estimates of steelhead smolt production in selected tributaries, and report writing. Secondary responsibilities included spawner surveys, monitoring tribal fisheries, the culturing of coho and chinook salmon, and inventory of fish passage problems in reservation streams.

EDUCATION EDUCATION

Master of Science, Biology

Central Washington University, Ellensburg, Washington- 1992

Thesis research focused on the juvenile life history of steelhead salmon in intermittent tributaries to the Satus Basin.

Bachelor of Science, Fisheries

University of Washington, Seattle, Washington- 1978

Section 10. Information/technology transfer

Fish counts are currently sent to the YKFP acting data manager. From there they are made available to interested people on the YKFP or within the Yakima basin. This is accomplished in a variety of ways, ie., e-mail, FAX, phone. In the near future (1998-99) fish counts will be available from the YKFP's Internet home page and from StreamNet.

In addition, the opportunity exists to present the technology side of this project at various professional meetings, such as, AFS (which was done by PNL in 1997 at the national AFS meeting).

Presently, more detailed information (ie., how many spring chinook used the Prosser left ladder.) Is reported in the annual reports or can be obtained by making a request directly to the project biologist for the FVMP.